

Page 5, lines 5-10, delete the paragraph and replace it with the following paragraph:

(7) The DNA of the above-mentioned (6), which is (a) or (b) of the following:

(a) a DNA having a base sequence of base numbers 537 - 1991 of the base sequence

Q1

depicted in Sequence Listing SEQ ID NO:1

(b) a DNA capable of hybridizing to the base sequence of the above-mentioned (a)

under stringent conditions.

Page 5, lines 13-16, delete the paragraph and replace it with the following paragraph:

(9) A gene encoding a protein having an SLDH activity, which is a DNA capable of

Q2

hybridizing a DNA having a base sequence of base numbers 537 - 1991 of the base sequence depicted in Sequence Listing SEQ ID NO:1 and a partial DNA thereof.

Page 5, beginning at line 20 and continuing to page 6, line 1, delete the paragraph and

replace it with the following paragraph:

(11) A promoter gene comprising the DNA of the following (a) or (b)

(a) a DNA having a base sequence of base numbers 1 - 536 of the base sequence

depicted in Sequence Listing SEQ ID NO:1

Q3

(b) a DNA having a base sequence of the above-mentioned ~(a) wherein one to

several bases is (are) deleted, substituted, inserted, added or modified, which DNA shows a promoter activity at least in one microorganism.

Page 8, beginning at line 21 and continuing to page 9, line 21, delete the paragraph

and replace it with the following paragraph:

The SLDH of the present invention is not particularly limited as regards the

derivation as long as it shows the above-mentioned characteristics. It may be derived from a

Q4

naturally occurring organism, a spontaneous or artificial mutant, or a transformant which is

obtained by introducing a heterologous (i.e. foreign) SLDH gene. Preferably, SLDH derived

24 from acetic acid bacteria, particularly bacteria belonging to the genus *Gluconobacter*, more preferably *Gluconobacter oxydans*, particularly the strain *Gluconobacter oxydans* 6624 (FERM BP-4415; International Patent Publication No. W095/23220) are exemplified. In another preferable mode, the SLDH of the present invention is an SLDH derived from the same gene as is the SLDH derived from the strain *G. oxydans* 6624 in its molecular evolution. As used herein, by the "derived from the same gene ... in its molecular evolution" is meant an SLDH reasonably concluded to have evolved from the same gene as has an SLDH derived from strain *G. oxydans* 6624 in its molecular evolution, as a result of the analyses of DNA sequence, physiological role and the like, and their DNA sequences show high homology. These SLDHs preferably have not less than 60%, most preferably not less than 80%, homology in the DNA sequence with an SLDH derived from the strain *G. oxydans* 6624. These genes can be cloned based on the DNA sequence depicted in Sequence Listing SEQ ID NO:1 and using a suitable primer according to the PCR method or using a suitable probe according to the hybridization method, as detailed later.

---

Page 9, beginning at line 22 and continuing to page 10, line 8, delete the paragraph and replace it with the following paragraph:

---

25 In a more preferable mode, the SLDH of the present invention is a protein having an amino acid sequence depicted in Sequence Listing SEQ ID NO:2 or a protein having an amino acid sequence having the amino acid sequence comprising one to several amino acids deleted, substituted, inserted, added or modified, as long as the SLDH activity is not impaired.

---

Page 11, lines 11-16, delete the paragraph and replace it with the following paragraph:

a6 Production of the SLDH of the present invention by chemical synthesis includes the steps of, for example, synthesizing, based on the amino acid sequence depicted in Sequence Listing SEQ ID NO:2, the entirety or a part of each sequence using peptide synthesizer, and renaturing the obtained polypeptide under suitable renaturation conditions.

Page 17, lines 9-26, delete the paragraph and replace it with the following paragraph:

a7 A DNA encoding the SLDH of the present invention preferably encodes an amino acid sequence depicted in v. Sequence Listing SEQ ID NO:2, or an amino acid sequence wherein, in the above-mentioned amino acid sequence, 1 to several amino acids are deleted, substituted, inserted or added (provided that a protein consisting of the mutated amino acid sequence can catalyze the reaction to convert D-sorbitol to L-sorbose). More preferably, a DNA encoding the SLDH of the present invention is a DNA substantially consisting of a base sequence having a base number 537 - 1991 of the base sequence depicted in Sequence Listing SEQ ID NO:1. As used herein, by the "DNA substantially consisting of" is meant a DNA consisting of this specific base sequence and a DNA consisting of a base sequence capable of hybridizing to the DNA consisting of this specific base sequence under stringent conditions, and encoding a protein having similar physicochemical properties as the protein encoded by the DNA consisting of this specific base sequence.

Page 18, lines 6-14, delete the paragraph and replace it with the following paragraph:

a3 The DNA of the present invention may be a DNA obtained from a genomic DNA as mentioned above, or a cDNA obtained from mRNA, or DNA chemically synthesized based on a base sequence having a base number 537 - 1991 from the base sequence depicted in Sequence Listing SEQ ID NO: 1.

Page 18, lines 15-19, delete the paragraph and replace it with the following paragraph:

Q9 The DNA of the present invention may be a DNA obtained from a genomic DNA as mentioned above, or a cDNA obtained from mRNA, or DNA chemically synthesized based on a base sequence having a base number 537 - 1991 from the base sequence depicted in Sequence Listing SEQ ID NO:1.

Page 18, beginning at line 20 and continuing to page 19, line 8, delete the paragraph and replace it with the following paragraph:

Q10 The DNA encoding SLDH, which is obtained from a genomic DNA with the SLDH activity as an index as mentioned above, contains a promoter gene sequence in the 5' upstream region. This promoter gene preferably has a base sequence having a base number 1 - 536 from the base sequence depicted in Sequence Listing SEQ ID NO:1, or said base sequence wherein one to several amino acids are deleted, substituted, inserted, added or modified, which is a DNA having a promoter activity in at least one microorganism. As the "microorganism" here, there are preferably exemplified prokaryotes such as bacteria (e.g., *Escherichia coli*, *Bacillus subtilis*, *Pseudomonas*, *Gluconobacter*, *Pseudogluconobacter*, *Acetobacter* and the like) and actinomycetes, and certain eucaryotes such as yeast and the like.

Page 35, lines 16-26, delete the paragraph and replace it with the following paragraph:

Q11 Using plasmids pUCP19-HC, pUC18-S1, pUC18-ES and pUC18E1 as templates and using universal primer and reverse primer (New England Labs.), which were M13 sequencing primers, first sequencing was performed. The sample was fluorescent labeled with BigDye Terminator Cycle Sequencing kit (Applied Biosystems) and analyzed with ABI PRISM 310 Genetic Analyzer (Applied Biosystems). The following 11 kinds of primers were synthesized and using pUCP19-HC as a template sequencing was performed, whereby the